

**Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.-35. (Cancelled).

36. (Currently Amended) A method for producing S-nitrosohemoglobin, said method comprising the addition of free NO to oxyhemoglobin under conditions to produce S-nitrosohemoglobin, said conditions comprising:

- (a) adding free NO in an amount sufficient to produce S-nitrosohemoglobin;
- (b) maintaining the R structure of hemoglobin; and,
- (c) preserving the redox chemistry of hemoglobin[[],] by adding a redox modifier, wherein the redox modifier is nitrite;

wherein the conditions for maintaining the R structure of hemoglobin comprise a phosphate concentration that is less than 100 mM and wherein the conditions for preserving the redox chemistry of hemoglobin occur in the absence of borate.

37. (Previously Presented) The method of claim 36, wherein preserving the redox chemistry of hemoglobin permits the transfer of NO from the heme Fe to cysteine on the  $\beta$  subunit.

38.-39. (Cancelled).

40. (Currently Amended) A method for producing intraerythrocytic S-nitrosohemoglobin, said method comprising the addition of free NO to oxygenated erythrocytes under conditions to produce intraerythrocytic S-nitrosohemoglobin, said conditions comprising:

- (a) adding free NO in an amount sufficient to produce intraerythrocytic S-nitrosohemoglobin;
- (b) maintaining the R structure of hemoglobin; and,
- (c) preserving the redox chemistry of hemoglobin[[],] by adding a redox modifier, wherein the redox modifier is nitrite;

wherein the conditions for maintaining the R structure of hemoglobin comprise a phosphate concentration that is less than 100 mM and wherein the conditions for preserving the redox chemistry of hemoglobin occur in the absence of borate.

41. (Previously Presented) The method of claim 40, wherein preserving the redox chemistry of hemoglobin permits the transfer of NO from the heme Fe to cysteine on the  $\beta$  subunit.

42.-43. (Cancelled).

44. (New) The method of claim 36, wherein the phosphate concentration is about 10 mM.

45 (New) The method of claim 36, wherein the amount of free NO is about 100 nM to about 1 mM and the ratio of free NO to heme is about 1:4000 to about 1:100.

46. (New) The method of claim 40, wherein the phosphate concentration is about 10 mM.

47. (New) The method of claim 40, wherein the amount of free NO is about 100 nM to about 1 mM and the ratio of free NO to heme is about 1:4000 to about 1:100.